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Rule, Glenn K

SOIL CONSERVATION LITERATURE :-
SELECTED CURRENT REFERENCES

Compiled By The Library Staff Of The Soil Conservation Service
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OCTOBER 1936

PERIODICAL ARTICLES

Aerial Photography

Air photographic survey. An explanation of the process.
Surveyor and Lunic. and County Engin. 93(2317): 832.
Je. 19, 1936.

Cultivation Implements

Haney, J.G. Soil erosion and moisture conservation.
Northwest Farm Equipment Jour. 50(7): 27-29. July 1936.
What can be done by systematic farming practices. Descriptions of the "right implements" essential for such conservation methods, including the plow, the "combine" plow-seeder, the rod-weeder, disk harrow, lister, sub-soilers, packers, wide-space furrow opener, manure and straw spreaders.

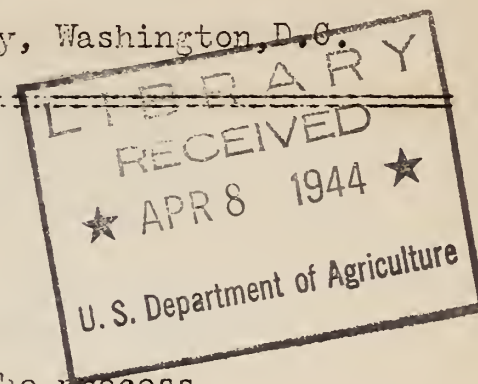
Dust Storms

Choun, H.F. Duststorms in the southwestern plains area.
U.S. Dept. Agr. Mo. Weather Rev. 64(6): 195-203. June 1936.
Verifies the seriousness and severity of soil erosion due to wind, but also shows that total abandonment of the area is not imminent or necessary. Suggests selective tilling of some of the area and use of the remainder for grazing purposes.
A table gives data on duststorms at Amarillo, Tex. during 1933, 1934, 1935 and 1936.

Sheldon, H.P. Dust is something to worry about. Field and Stream 41(2): 19. June 1936.

An editorial justifies the interest of the Biological Survey in dust storms, indicating that the Survey "knows that if dust storms and soil erosion by floods can be reduced or abated, the number of birds, animals and fishes will increase."

The following statement is made: "It is a fortunate thing for sportsmen and nature lovers that between the Soil Conservation Service and the Biological Survey there is complete understanding and sympathy, and none of the fumbling stupidity and cross-purpose frustration which has sometimes characterized the operations of great human agencies. The Soil Conservation Service is anxious to conserve soil and restore wildlife; the Biological Survey is anxious to restore wildlife and conserve soil. Each is able to direct its extensive operations in a way to assist the other agency, and with greater benefits to the nation they both serve."



THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
JANUARY 1950

REPORT

ON THE

RESEARCH

CONDUCTED BY

DR. J. H. HARRIS

IN THE
LABORATORY OF
ORGANIC CHEMISTRY
DURING THE
YEAR 1949-1950

1950

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
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Erosion

Cates, J.S. Missouri builds a new agriculture. Country Gent. 106(10): 12-13, 76. October 1936.

"A tale of developing and fitting together a group of new-type crop plants into a radical new system of agriculture", the system designed and developed by Etheridge and Helm of the Missouri State University, "built in the main around Korean lespedeza as what might be called the key crop."

This system "keeps the land always covered with a mat of plant growth and so eliminates erosion; stops it dead in its tracks, in fact."

The control of soil erosion in the Union of South Africa. An explanation of the various systems - special facilities available to farmers under the official scheme. Rhodesia Agr. Jour. 33(1):11-17. January 1936.

Section 17 of Act no.29, 1933, provides for the control of soil erosion and the construction of small dams as a national concern.

Cooperrider, C.K. and Hendricks, B.A. Erosion on the upper Rio Grande. Science n.s. 84(2174):203. Aug. 28, 1936.

Gives result of recent survey of Upper Rio Grande watershed in New Mexico. States that "on 40 per cent. of the watershed in New Mexico above Elephant Butte Dam, deterioration of the natural vegetation has reached an extreme stage, and the lands are excessively eroded. On 35 per cent. of the area, the plant cover is in a medium stage of deterioration and erosion is advanced. Evidences of accelerated erosion were found on parts of all the major vegetation-type areas, principally where utilization was uncontrolled."

Hammar, C.H. An approach to the grading of land for purposes of appraisal. Jour. Farm Econ. 13(3): 523-532. August 1936.

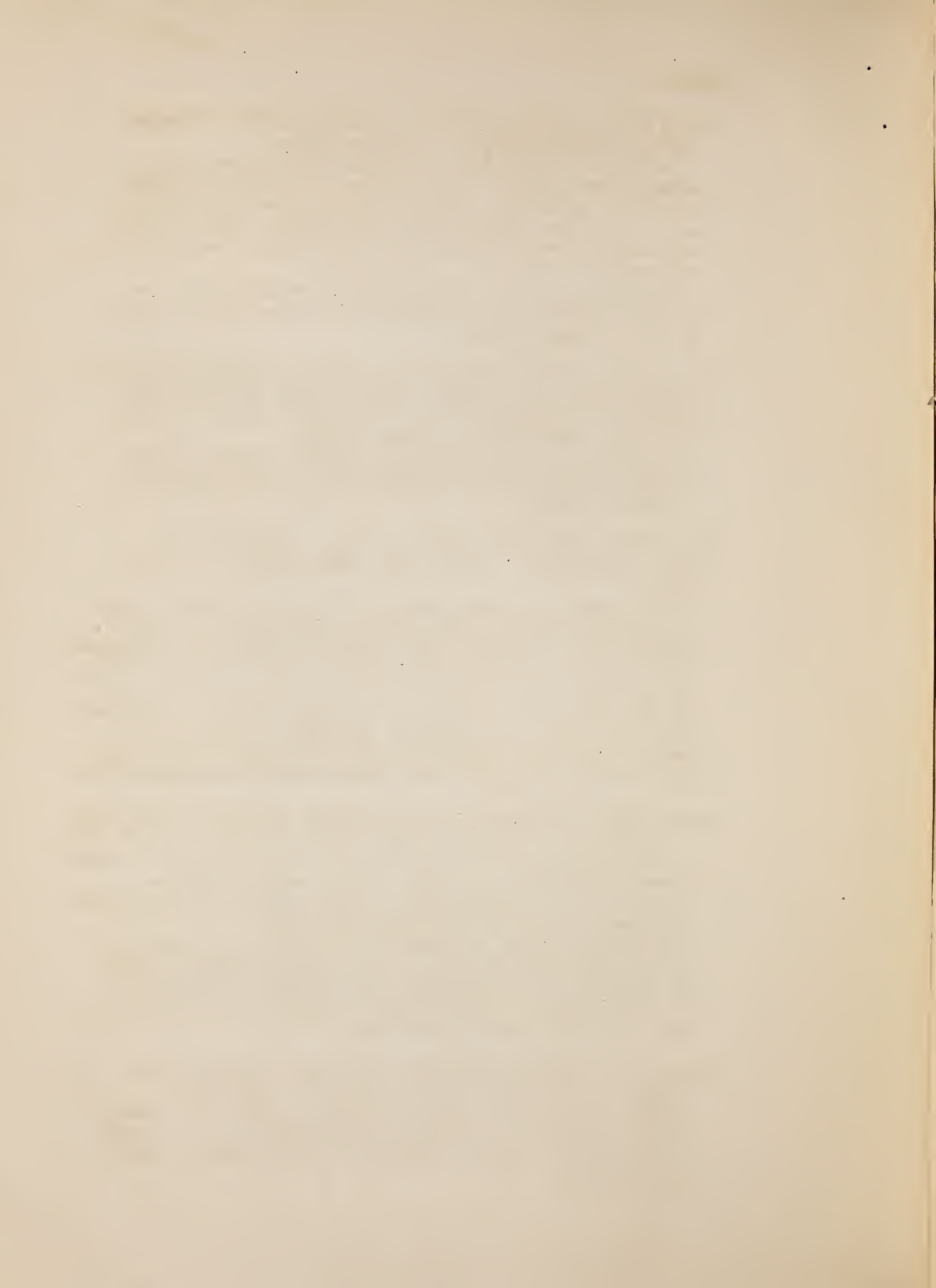
Contribution from the Department of Agriculture and Soils, Missouri Experiment Station, Journal series, no.383.

Reflects the unsatisfactory present status of land grading or classification for appraisal purposes.

Projects a system of classification based on a study of the unit soil factors which affect plant growth. Mentions the necessity for also taking into account the stability of the grading, a factor which is influenced by deterioration of the land due to erosion.

Schemes for soil-erosion control and water conservation. Farming in So. Africa 11(124): 299, 302. July 1936.

Brief summary of the various schemes under which South African government assistance is afforded for the control of soil erosion and the building of small dams for water conservation.



Erosion(cont'd)

Prevention of soil erosion. Queensland Agr.Jour. 45(2):
219. Feb.1,1936.

Prevention of gullying in New South Wales,
"Following research into the problem of soil erosion
by field officers of the New South Wales Department of
Agriculture, the senior experimentalist(Mr.E.S.Clayton)
has outlined measures for prevention and reclamation which
will be embodied in a campaign to be launched shortly, with
the object of instructing primary producers."

The farm's most vital problem. Farm Machin. and Equip.
Aug.15, 1936, p.13.

Discusses need for erosion control in an interview with
L.F.Livingston, manager of the Du Pont agricultural exten-
sion section. Article quotes Mr. Livingston as saying
that in control of gullies with almost vertical sides
"blasting the top sides of the banks to throw fertile top-
soil into the gully has proved to be the most effective
method of procedure. For this reason, explosives are
playing a highly important part in the country's erosion
control program."

Grasses

Wells, W.G. The value of grassland cultivations in cotton
rotations. Queensland Agr. Jour. 46(1):59-63. Jly.1,1936.
Value in Queensland, Australia.

Green Manure

Seammell, S.E. A summary of some continental data concerning
natural manure. Jour.Min.Agr. (Gt.Brit.) 42(12): 1226-
1234. March 1936.

Briefly outlines the practice of green-manuring on some
soils in northern Germany.

Infiltration

Husgrave, G.W. and Free, G.R. Some factors which modify
the rate and total amount of infiltration of field soils.
Jour. Amer.Soc. Agron. 28(9): 727-739. September 1936.
Literature cited: p.739.

"The study as a whole would indicate that, although the
infiltration rate may be greatly modified by changes in
porosity induced by one or another means, and relatively
by soil moisture content or vegetative cover, yet the
dominant factor may well be the soil type, at least insofar
as comparison between the permeable Marshall and the rela-
tively impermeable Shelby are concerned.

"The transitory effects of cultivation and low soil mois-
ture contents doubtless account to a large degree for varia-
tions in run-off which are commonly found for similar rains.
They cannot be relied upon, however, in the design of erosion
control measures for which purpose infiltration rates of a
conservatively low magnitude should be used."

Listers

White, J.H. Thousands journey to Peacock farm. Plainsmen from four states see new machines and deep well irrigation. West.Farm Life 36(17): 6, 15. Sept.1,1936.

Relates effective work done by the damming lister invented by Charles T.Peacock of Lincoln County, Colorado.

"It is not uncommon for this farmer to list and pocket-dam his summer-fallow three times before planting...As a result of these operations, after each rain Peacock's fields are literally filled with thousands of small ponds that hold water until it gradually soaks into the ground."

Plant Cover

Pearse, C.K. and Woolley, S.B. The influence of range plant cover on the rate of absorption of surface water by soils. Jour.Forestry 34(9): 344-347. September 1936.

"The study reported, which is based upon measurements with inexpensive and portable equipment, reveals that range plants exert a marked influence on the rate water is absorbed by surface soils. Moreover, because plants which are most conducive to water absorption are also of greatest value for grazing purposes, the study clearly suggests that proper range management and adequate watershed protection go hand in hand."

Absorption study, part of range-erosion research initiated by the Intermountain Forest and Range Experiment Station.

Wind erosion in South Australia. Nature 138(3487): 358-359. Aug. 29,1936.

It is indicated that "the gravity of the situation" has been revealed in a note by F.N. Ratcliffe, received from the Commonwealth Council for Scientific and Industrial Research.

"The evil might be checked by adopting a lower stocking policy; but the only hope for the already denuded areas is to introduce perennial exotic plants capable of stabilizing the large sand drifts and withstanding rabbits and a very low and uncertain rainfall."

Rainfall

Zoch, R.T. On the relation between rainfall and stream flow - II. U.S.Dept. Agr.Mo. Weather Rev. 64(4): 105-121. April 1936.

It is here shown that, regardless of how irregular any natural drainage area may be, systematic methods can be used for predicting its discharge.

Reforestation

Turner, L.M. Root growth of seedlings of *Pinus Echinata* and *Pinus Taeda*. Jour .Agr.Research 53(2): 145-149. Jly.15,1936.

"The operations of growing and transplanting southern pine seedlings for reforestation and afforestation purposes are still beset with the danger of high mortality of transplanted stock. The advantages of fall over spring transplanting, or vice versa, are yet to be determined... The object of this experiment was to investigate the growth of roots."

Run-off

Hathaway, G.A. Snow surveys predict runoff. Stream discharges in upper Missouri River valley accurately forecast last year from studies of condition of snowfields, which will be continued as guide to future operation of Fort Peck reservoir. Engin. News-Rec. 116(21): 728-730. May 21, 1936.

Gives characteristics of area and results of survey.

Silt

An earth-handling problem. Engin-News-Rec. 116(21): 747. May 21, 1936.

Forecasts the necessity of solving new earth-handling problems if it becomes necessary to clear reservoirs of silt. It is reported that "much hopeful talk is indulged in about what can be done to prevent reservoir silting, but at least in the West, it is likely that no dependable means of prevention will be found regardless of what may be done for soil conservation."

Vegetative Surveys

Stewart, George and Hutchings, S.S. The point-observation-plot(square-foot density) method of vegetation survey. Jour. Amer. Soc. Agron. 23(9): 714-722. September 1936.

"This paper explains the working of the new point-observation-plot method of vegetation survey which has evolved over a period of 4 years... Its application extends throughout the fields of range management, pasture management, agronomy, and soil erosion. It provides definitely quantitative data instead of merely qualitative."

Water Conservation

Chase, Stuart. Behind the drought. Harpers Mag.173(1036): 338-377. September 1936.

"This article traces the rainfall from the point on the height of land which divides one basin from another, that is from the top of the watershed, down the upland valleys and the lowland valleys to the ocean."

(see page 6, continued)

Water Conservation (cont)

Chase, Stuart(cont)

It notes the problems and conditions, one after the other, which the water creates as it comes down, and concludes with the suggestion that "there is no solution" to the problems, "either for the continent or for man, except in co-ordinated control that comprehends all problems."

Drought area committee report urges water and soil conservation. Great Plains problem found to require farming changes, dams, wells and irrigation systems. Engin. News-Rec. 117(10): 349. Sept. 3, 1936.

Excerpts from and brief discussion of the report presented to the President, August 27, 1936.

The drought problem remains. Engin. News-Rec. 117(10): 347. Sept. 3, 1936.

Editorial criticizing the report of the Great Plains Drought Area Committee, issued in August 1936, as contributing "nothing toward a solution of the essential question, that of recurrent drought periods and the extension of farm settlement into a pasture belt. On the other hand, in directing attention to the urgent need for maximum conservation of water the committee's discussion has timely value. Despite its emptiness, if the report serves as an incentive for a detailed and thorough exploration of the water resources of the region and the discovery of feasible ways to conserve them it may yet justify the effort put on it."

Flood control at the source. Farm and ranch 55(17):13. Sept. 1, 1936.

Describes Peto King's dam building machine which is helping Callahan county, Texas tackle the water problem "at its source."

Article favors the building of small dams in order to hold the water where it falls. "It is generally believed, with some color of validity, that a liberal sprinkling of small artificial lakes through the country would have a beneficial influence in modifying the climate. Evaporation during the hot months would supply humidity to the air. It seems quite within the bounds of reason, though it cannot be scientifically proven, that West Texas might have a more stable climate if dotted with small bodies of water in the thousands of places where dams can be cheaply built in proportion to their storage capacity.

Importance of water conservation. Reclam. Era 26(9):201-202. September 1936.

Address given on August 5, 1889, by Major John Wesley Powell, Director of the Geological Survey, before the North Dakota Constitutional Convention.

Urges the preservation and storage of stream water in North Dakota.

Monson, O.W. Water conservation in eastern Montana.
Mont. Farmer 23(21): 3,27. Jly.1,1936.

Calls attention to the possibilities of improving the range lands of Montana by the conservation of flood waters and the reduction in runoff losses.

Suggests development of stock water reservoirs, construction of small storage reservoirs, and diversion of flood waters onto large grassy flats.

Shaw, F.R. Conserving our national water resources.
Jour.Amer. Water Works Assoc. 28(6): 757-769. June 1936.

Address before Indiana Section of the American Water Works Association, April 8, 1936.

A consideration of the problem of conserving our national water resources in connection with the various forms in which and places wherein water exists and the changes and effects which transpire in its travels, as well as the uses to which it is put.

Shows that water for human consumption is either directly or indirectly affected by silt, lowering of the ground water table, decrease of infiltration, low stream flows, and floods.

Wildlife Management

Cliff, E.P. The beaver - empire builder and conservationist. Utah Juniper v.7, 1936, pages 23-26. illus.

Relation of the beaver to trout streams and to flood control.

RECENT LIBRARY ACCESSIONS

Books and Pamphlets

Brand, D.D. Notes to accompany a vegetation map of north-west Mexico. Univ. of N.M. Bull.whole no.230. Biol.ser., v.4,no.4. 27pp. Albuquerque,N.M. University of New Mexico press, 1936. (456.1 B73)

This paper embodies a preliminary study of the vegetation of northwestern Mexico. The region designated as northwestern Mexico comprises the Mexican states of Sonora, Sinaloa, Chihuahua and Durango.

The preface states that "at the moment, this paper constitutes the most complete summary of the literature and knowledge concerning vegetation of the area involved."

Chi, Ch'ao-ting. Key economic areas in Chinese history as revealed in the development of public works for water control. 168pp. illus. London, George Allen & Unwin, Ltd. 1936, (277.134 C45)

Bibliography: pp. 151-164.

Partial contents: Chapter II. Geographical basis of water-control and economic regionalization in China; Chapter III A statistical study of the historical development and geographical distribution of water-control activities; Chapter IV. Origin of water-control as an economic function of the Chinese state; Chapter V. The loess region and central Huang Ho basin as key area.

Clarke, G.R. The study of the soil in the field. 145 pp.
Oxford, The Clarendon press, 1936. (56 C55)
Published under the auspices of the Imperial Forestry
Institute, University of Oxford.

Clements, F.E. and Chaney, R.W. Environment and life in
the great plains. Carnegie Inst. of Wash. Suppl. Pub. 24.
54pp. illus. Washington, D.C., 1936. (500 C21Sp)
Bibliography: pp. 53-54.

"During recent years the untoward effect of climate has
been strikingly in evidence throughout the Great Plains
and adjacent regions. The most dramatic phenomenon has
been a succession of bewildering dust storms driven by the
wind from soil stripped of its protecting grass cover
and parched by excessive heat and drought. The failure
of crops and the extensive removal of top-soil has led
to the abandonment of farms on a large scale and to the
belief that a great portion of the land is permanently
unsuited to agriculture.

"Such views are the outcome of too short a perspective
and hence it becomes imperative to analyze the situation
in the light of changes of climate and life as revealed
by the geological record... There would seem to be no other
basis for predicting future climatic changes and related
crop production than to survey the climatic trends of the
immediate and more remote past and to correlate them with
the response of plant and animal life. The writers have
in preparation a comprehensive statement of this record
in western America and its interpretation in terms of
changing environments. Meanwhile, it seems appropriate
to present a general summary of the results of these studies
to serve as a background at a time when critical decisions
must be made regarding the future utilization of large
areas of land.

Combs, J.F. Growing pastures in the South. 270pp. illus.
Chapel Hill, Univ. of North Carolina press, 1936, (60.1 C73)

The author feels that pasture crops will aid in saving
the millions of acres of top soils that are being lost from
erosion. These crops in turn will provide the background
for improved livestock, self-sustaining farms, and a con-
tented rural life.

"This book is sent forth with the hope that it may be
the means of creating a greater interest in the important
program of pasture improvement, and that it may furnish re-
liable information on how to develop pasture areas into pro-
fitable grazing lands."

Emerson, F.V. Agricultural geology. Rev. by John E. Smith...
377pp. New York, J. Wiley & sons, inc. 1923. (400 Em5)
Contains bibliographies.

Essays in geobotany in honor of William Albert Setchell;
edited by T.H. Goodspeed. 319pp. illus. Berkeley,
Univ. of Cal.press, 1936. (452.9 Es7)

Partial contents: The origin of the desert climax
and climate, by F.E. Clements.- The strand and dune
flora of the Pacific coast of North America; a geogra-
phic study, by W.S.Cooper: - The plant as a metabolic
unit in the soil-plant system, by D.R.Hoagland.- The
plant communities of the world, by Eduard Rübel.

Fenneman, N.M. Physiography of western United States.
534pp. New York and London, McGraw-Hill book company,
inc., 1931. (331 F36P)

Gorrie, R.M. The use and misuse of land. 80pp.
illus. Oxford, Clarendon press, 1935. (Oxford forestry
memoirs, no.19) (202 G38)

This report was prepared from material collected
during a four month's tour of the United States. The
author came to this country due to a research fellow-
ship awarded him to study "The Correlation of Erosion
Damage and Grazing in Forest Lands."

He states in his preface that "the report now presented
deals in addition with the somewhat wider implications
of the misuse and abuse of forest land and the need for
a well-considered land policy to prevent this."

Chapter headings are as follows: Forestry as a factor
in land management; Grazing and range management; Over-
grazing as a primary cause of soil erosion; Value of
vegetational cover in stream-flow control; Forestry as
a factor in farm and village economy; Farm erosion and
its control; Other examples of the misuse of the land
(including road erosion); Public and private control of
land.

Great Britain. Ministry of agriculture and fisheries.
Reports on the work of agricultural research insti-
tutes and on certain other agricultural investigations
in the United Kingdom 1935-1934. 351pp. London, H.M.
Stationery off., 1936. (10 G796)

I.- Research institute investigations. A. Soils,
nutrition and plant physiology. 1. Rothamsted experi-
mental station, pp.7-16; 2. Macaulay institute for soil
research, Aberdeen, pp.17-26...D. Plant breeding, crop
varieties and seeds, pp.27-56.

Haley, J.E. Charles Goodnight, cowman and plainsman.
435pp. Boston, Houghton Mifflin company, 1936. (120 G622)

King, H.W. Handbook of hydraulics for the solution of
hydraulic problems...2d ed. 523pp. illus. New York and
London, McGraw-Hill book company, inc., 1929. (290 K58)

STATE PUBLICATIONSGeorgia

Alexander, E.D. Crimson clover for fertilizer, feed and soil protection. Ga. Agr.Col. Ext.Bull.452. 12pp., illus. Athens, 1935. (276 G29B)

"Crimson clover can be utilized in many ways. Its first and greatest value is its use as a soil conservation and improvement crop."

Missouri

Westvold, R.H. and Bennitt, Rudolf. Improving food and cover for wildlife on Missouri farms. I.Trees and shrubs. Mo.Col.Agr. Ext.Serv.Circ.548. 8pp., table. Columbia, 1936. (275.29 M69C)

Table I gives the suitability of various plants to the different soils, their value for various purposes, and the period during which they furnish food.

U.S. GOVT. PUBLICATIONS

Kell, W.V. Cover crops for soil conservation. U.S. Dept. Agr.Farmer's Bull.1758. 14pp.,illus. 1936. (1 Ag84F)

Crops suitable for soil conservation and the regions to which they are adapted are indicated in this bulletin.

U.S. Resettlement administration. Land utilization division. Land planning section. Use of land for free range in Arkansas. 11 numb.1. Little Rock, Ark.,1936 (1 95 Us2)
By Dean W.Blackburn.

Suggests the formation of cooperative grazing districts as a "possible modification of the free range system which would preserve its main benefits to small farmers and eliminate its main evils", overgrazing and indiscriminate burning of forests.

FINIS

